



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,452	09/29/2000	John E. Hershey	016	1304

7590 11/30/2004  
McDermott Will & Emery  
600 13th Street NW  
Washington, DC 20005-3096

EXAMINER

PATEL, SHEFALI D

ART UNIT PAPER NUMBER

2621

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/672,452

**Applicant(s)**

HERSHEY ET AL.

**Examiner**

Shefali D Patel

**Art Unit**

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f):
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date 09/8/04; 10/8/04
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 12, 2004 has been entered.

### ***Response to Amendment***

2. The amendment filed on October 12, 2004 was received on October 18, 2004 along with a request for continued examination has been entered.

### ***Response to Arguments***

3. Applicant's arguments, see remarks (pages 8-9), filed on October 12, 2004, with respect to the rejection(s) of claim(s) 1, 15, and 24 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Matsumoto et al. (US 6,647,125).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2621

5. Claims 1-3, 6, 9-10, 13-16, 19-20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barton (USPN 5,646,997) in view of Matsumoto et al. (US 6,647,125) (hereinafter, "Matsumoto").

With regard to **claim 1** Barton discloses a method for steganographically combining data (embedding data in an original bit stream is combining original bit stream with the data, See col. 4 lines 44-46) comprising the steps of: acquiring first data via a first sensor (acquiring a "digital block"; the scanner, video or audio device for scanned image, video image or an audio signal has a sensor. See, col. 5 lines 58-62); contemporaneously (as seen in figure 1 of Barton that the meta-data is acquired at the same time or a little later than the main data block) acquiring meta-data associated with the acquired first data via a second sensor (obtaining an authentication stamp about the digital block that contains a digital object. See, col. 5 lines 62-67. Note, the authentication stamp includes additional data referred to "meta-data" See, col. 6 lines 2-6. And, also note that plurality of the imaging device (i.e., cameras, video recorders) are disclosed at col. 6 lines 12-14); and combining the acquired first data and the acquired meta-data into steganographic data (based upon said figure-of-merit testing)(combining meta-data into a digital block, See, col. 6 lines 51-60), wherein a difference between the steganographic data and the acquired first data is imperceptible (embedding a data into a data stream (authentication stamp into a digital block) is done in such a way that the difference is imperceptible to a human being. See col. 4 lines 52-57 and col. 5 lines 6-9).

Barton does not expressly disclose having the step of figure-of-merit testing the acquired first data and the acquired meta-data to determine appropriate regions of the acquired first data in which to embed the acquired meta-data and which of a plurality of steganographic methods to

Art Unit: 2621

use to embed the acquired meta-data. Matsumoto discloses this at col. 8 lines 26 to col. 9 lines 1-40. Matsumoto discloses determining appropriate regions of the acquired first data in which to embed the acquired meta-data (Matsumoto discloses discriminating each region (i.e., tiles) of the image (i.e., first data) and defining them as "data format" attributes. Specifically, these data formats are, 1="non-compressed image," 2="JPEG compressed image," or 3="single color" image. See, col. 9 lines 20-26 and lines 35-37) and which of a plurality of steganographic methods to use to embed the acquired meta-data (Matsumoto discloses embedding using respective methods in respective tiles. For example, if the data format attribute is 1 then, watermarking method I is used, if the attribute is 2 then, watermarking method II is used, and if the attributes is 3 then, the watermark is not inserted. Please see, col. 8 lines 26 to col. 9 lines 1-13 for details of Method I and II.).

Barton and Matsumoto are combinable because they are from the same field of endeavor, i.e., watermarking. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Matsumoto with Barton. The motivation for doing so is to add the information associated with the image data in a suitable method in case of storing plural image data files of mutually different resolution levels representing a same input image; to add the information associated with the image information in a suitable method in case of dividing the input image into plural areas and storing the image information in the unit of such divided area in a manner inconspicuous or invisible to the human eyes. Therefore, it would have been obvious to combine Matsumoto with Barton to obtain the invention as specified in claim 1.

Art Unit: 2621

With regard to **claim 2** Barton discloses a storing step to store the data (storing a compressed version of bits, See, col. 9 lines 4-7).

With regard to **claim 3** Barton discloses a storing step to store the data as claimed in claim 2. It is obvious to include the storing device (i.e., a memory) being coupled with the data source (the data source is a scanner, video or audio device for scanned image, video image or an audio signal, respectively. See, col. 5 lines 58-62.) in order to transfer the data from one device to another for storing purpose and later for retrieving the data for further use.

With regard to **claim 6** Barton discloses the step of combining producing one (or more) steganographic data combinations (combining the acquired first data (i.e., digital block) and the acquired meta-data into steganographic data, See, col. 6 lines 51-60).

With regard to **claim 9** Barton discloses acquiring meta-data from a data source (obtaining an authentication stamp about the digital block that contains a digital object. See, col. 5 lines 62-67. Note, the authentication stamp includes additional data referred to "meta-data" See, col. 6 lines 2-6. The data source is a scanner, video or audio device for scanned image, video image or an audio signal, respectively. See, col. 5 lines 58-62.). Barton does not expressly disclose that acquiring meta-data is completed before acquiring another first data. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to acquire the meta-data associated with the acquired first data before acquiring another first data in order to keep track of particular meta-data belonging to particular data. By acquiring a meta-data of the first data before acquiring another first data, one has the accurate meta-data that belongs to the first data and so on.

Art Unit: 2621

With regard to **claim 10** Barton discloses at least a portion of the acquired meta-data being related to information received from a user (See, col. 6 lines 2-6).

With regard to **claim 13** Barton discloses a step of (pre-processing the meta-data by hashing the meta-data), encrypting the meta-data (see, col. 7 lines 14-16), (or encrypting the hashed meta-data).

With regard to **claim 14** Barton discloses acquiring first data and meta-data as discussed above in claim 1. Barton discloses the first data and the meta-data are acquired at approximately the same time (i.e., in parallel as seen in Fig. 1). Meta-data is acquired about an image right after the first data of the image, i.e., approximately at the same time (see, col. 5 lines 62-67).

**Claim 15** recites identical features as claim 1 except claim 15 is a device claim. Thus, arguments similar to that presented above for claim 1 is equally applicable to claim 15. Note: Barton discloses having an apparatus (i.e., a device) to the invention (see, col. 5 line 58) and this apparatus is described by referring to Fig. 3 and under section "Hardware Encoding" at col. 9 line 46. Barton discloses that the encoding steps are implemented in an electronic hardware for application such as cameras, video recorders, and cable converters (note, these applications inherently includes sensors) (See, col. 6 lines 11-14).

**Claim 16** recites identical features as claim 3 except claim 16 is a device claim. Thus, arguments similar to that presented above for claim 3 is equally applicable to claim 16.

With regard to **claim 19** Barton discloses a step of receiving information from a user of the device at col. 6 lines 2-6. It is obvious that a user interface is configured to receive the information since Barton discloses receiving information from the user.

Art Unit: 2621

With regard to **claim 20** it is obvious that the user at col. 6 lines 2-6 configures one (or more) kind(s) of input devices to interact with the user interface since Barton discloses supplying the data from the user.

**Claim 22** recites identical features as claim 9 except claim 22 is a device claim. Thus, arguments similar to that presented above for claim 22 is equally applicable to claim 22.

6. Claims 4-5 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barton in view of Matsumoto as applied to claims 1-3, 6, 9-10, 13-16, 19-20, and 22 above, and further in view of Cass et al. (USPN 5,946,414) (hereinafter, "Cass").

With regard to **claim 4** Barton discloses a storing step to store the data as disclosed in claim 2. However, Barton does not expressly disclose storing a data at a location remote from the site where the first data and meta-data are acquired. Cass discloses storing a data at a location remote from the site where the first data and meta-data are acquired (See, col. 35 lines 22-32 and col. 36 lines 1-5). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to store the data at a location remote from the site where the first data was acquired in order to communicate with the opposite party which reduces cost and obtain results in timely-fashion.

**Claim 5** recites identical features as claim 4. Thus, arguments similar to that presented above for claim 4 is equally applicable to claim 5.

**Claim 21** recites identical features as claim 5 except claim 21 is a device claim. Thus, arguments similar to that presented above for claim 21 is equally applicable to claim 21.



Art Unit: 2621

7. Claims 11-12, 24-25 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barton in view of Matsumoto as applied to claims 1-3, 6, 9-10, 13-16, 19-20, and 22 above, and further in view of Chow et al. (USPN 6,292,092) (hereinafter, "Chow").

With regard **claim 24**, the recited features are the same as those in claim 15, and the arguments in paragraph 5 above as to the relevance of Barton in view of Matsumoto are incorporated herein. However, claim 24 more precisely defines the type of image that is being acquired. Barton does not expressly disclose image being an electro-optical image. However, Chow teaches that the image is acquired by an electro-optical means at col. 6 line 37. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Chow with Barton. The motivation for doing so is that the electro-optical image has a low contrast when converting a scanned picture to black and white. Thus, in order to reduce the resolution for encoding/decoding systems the image should be acquired by electro-optical means, as suggested by Chow at col. 6 lines 27-39. Therefore, it would have been obvious to combine Chow with Barton to obtain the invention as specified in claim 24.

With regard to **claim 11** Barton discloses acquiring the first data from an image (acquiring a digital block, See col. 5 lines 58-62). Barton does not expressly define the image to be an electro-optical image produced by a component of digital camera. However, Chow discloses the image to be an electro-optical image captured by an electro-optical means, i.e., a digital camera (See, col. 6 line 37).

With regard to **claim 12** Barton discloses the meta-data relating to one (or more) of identification of the acquired image, (parameter settings of the digital camera, an environment in

Art Unit: 2621

which the image is acquired, and a spatial description of the camera.) (one or more of identification of the acquired image is related to the meta-data as disclosed at, col. 6 lines 2-6).

**Claim 25** recites identical features as claim 3. Thus, arguments similar to that presented above for claim 3 is equally applicable to claim 25.

With regard to **claims 28 and 29** Barton discloses a display area to display information related to the meta-data and the steganographic data (See, col. 5 lines 20-24). Note, since Barton teach of displayed image, it is apparent that Barton has a display means to display the images.

With regard to **claim 30** Barton discloses acquiring meta-data related to one (or more) of (camera angle, geographical location, environmental conditions, data and time), image subject identification at col. 6 lines 2-6 (and image parameter settings). Note, here image subject identification is supplied by the user referred to as a meta-data.

8. Claims 7-8 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barton in view of Matsumoto as applied to claims 1-3, 6, 9-10, 13-16, 19-20, and 22 above, and further in view of Chen et al. (USPN 6,233,347). (hereinafter, "Chen").

With regard to **claim 7** Barton discloses a step of combining producing one (or more) steganographic data combinations as disclosed in claim 6 (see, col. 6 lines 51-60). However, Barton does not expressly disclose evaluating each of the one or more steganographic data combinations to determine the one combination that most closely matches the acquired first data. Chen discloses evaluating each of the one (or more) steganographic data combinations (evaluating data combinations for the first and second group. See, col. 12 lines 21-30) to determine the one combination that most closely matches the acquired first data (the first and

Art Unit: 2621

second groups are the closest one to match with the host signal. See, col. 12 lines 30-39). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Chen with Barton. The motivation for doing so is that by having a combination of the steganographic data, one can compare to obtain the closest match with the original image for an accurate and non-faulty result. Therefore, it would have been obvious to combine Chen with Barton to obtain the invention as specified in claim 7.

With regard to **claim 8** Chen discloses repeating the step of combining at col. 48 lines 44-49.

**Claim 17** recites identical features as claim 7 except claim 17 is a device claim. Thus, arguments similar to that presented above for claim 7 is equally applicable to claim 17.

With regard to **claim 18** Chen discloses a figure-of-merit tester (i.e., embedding computer system 110A in Fig. 2A including an information embedder) configured to determine one of the one or more steganographic data combinations that differs the least from the acquired data (See, col. 12 lines 20-45 and computer systems 110 at col. 13).

9. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barton in view of Matsumoto and Chow as applied to claims 1-3, 6, 9-10, 13-16, 19-20, and 22 above, and further in view of Chen et al. (USPN 6,233,347). (hereinafter, "Chen").

With regards to **claims 26-27**, the recited features are the same as those in claims 17-18, and the arguments in paragraph 11 above as to the relevance of Chen are incorporated herein.

Art Unit: 2621

10. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barton in view of Matsumoto as applied to claims 1-3, 6, 9-10, 13-16, 19-20, and 22 above, and further in view of Honsinger et al. (USPN 6,278,791 B1) (hereinafter, "Honsinger").

With regard to **claim 23** Barton discloses the meta-data comprising encrypted meta-data portions (see, col. 7 lines 14-16). Barton does not expressly disclose the meta-data comprising hashed and encrypted meta-data portions. However, Honsinger discloses the meta-data comprising both hashed and encrypted meta-data portions (see, col. 6 lines 64-67 and col. 9 lines 12-17). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Honsinger with Barton. Honsinger and Barton are combinable because they are from the same field of endeavor, i.e., embedding data. The motivation for doing so is that by having both hashed and encrypted portion of the meta-data, additional security is provided using a strong system prior to the embedding process as taught by Honsinger at col. 6 lines 64-67. Therefore, it would have been obvious to combine Honsinger with Barton to obtain the invention as specified in claim 23.

11. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barton in view of Matsumoto further in view of Chow as applied to claim 24 above, and further in view of Honsinger.

With regards to **claim 31**, the recited features are the same as those in claim 23, and the arguments in paragraph 13 above as to the relevance of Honsinger are incorporated herein.

Art Unit: 2621

***Conclusion***

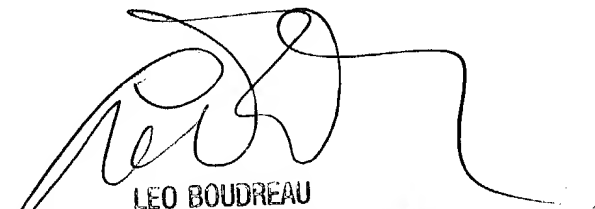
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shefali D Patel whose telephone number is 703-306-4182. The examiner can normally be reached on M-F 8:00am - 5:00pm (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H Boudreau can be reached on 703-305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shefali D Patel  
Examiner  
Art Unit 2621

November 16, 2004

  
LEO BOUDREAU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600